仁愛醫院
UNION HOSPITAL

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Procedure Information

Coronary Angiogram +/- Percutaneous Coronary Intervention

Introduction

Coronary angiogram is an X-ray examination of the coronary arteries which lie on the outside surface of the heart, supplying blood to the heart muscle. During the examination, a catheter is inserted through the artery at your groin or wrist to your heart. A dye is injected through the catheter. With aid of X-ray imaging, narrowing or blockage of the coronary arteries, as well as the location and severity of blockage can be identified, in order to plan further treatment if necessary.

If any suitable narrowing is found in the coronary arteries, your cardiologist may then perform Percutaneous Coronary Intervention (PCI) to dilate and maintain patency for the narrowed coronary arteries. This may follow directly after diagnostic coronary angiogram. In emergency situation caused by acute coronary syndrome (heart attack), PCI can be life-saving.

Outcomes

Coronary Angiogram

Patency of the coronary arteries is examined. Any narrowing or blockage of the coronary arteries is identified.

Percutaneous Coronary Intervention

Narrowing or blockage of the coronary arteries is treated, blood flow to the heart muscle is restored, thus chest pain can be relieved and activity tolerance can be improved.

Procedures

1. This invasive procedure is performed under local anaesthesia in a cardiac catheterization centre. You are kept awake and may be lightly sedated.
2. Your heart rate and rhythm, blood pressure, and blood oxygen level are monitored throughout the procedure.
3. A small cut is made over the groin or wrist. A catheter is inserted through the cut to the artery, and then advanced to the heart under X-ray guidance.

Coronary Angiogram

4. Contrast media is injected into the catheter and X-ray images are taken. Any narrowing and blockage in blood flow is highlighted. You may feel a flushing or warm sensation after the contrast media is injected.

If narrowing or blockage of coronary arteries is identified, PCI may be performed.

5. A thin guide wire is advanced across the narrowing. It serves as a track to allow a special designed balloon to go to the narrowing.
6. The balloon is advanced to the narrowing and inflated to open up the blocked artery.
7. A stent is implanted permanently inside the artery to keep it patent.
8. Depending on individual situation, other techniques may be adopted to improve the success and outcome of the PCI procedure.
9. During the procedure, you may be asked to hold the breath or cough. Transient chest pain may be experienced during the procedure. If you experience severe or persistent chest pain, dizzy spell or any discomfort, please inform the staff.

After Coronary Angiogram / PCI

10. The catheter is removed.
11. The wound site is compressed by a device to stop bleeding.

Possible Risks & Complications

Common Risks with Minor Consequences

- Allergy to contrast media or medication (e.g. nausea, rash and itchiness)
- Wound complications (e.g. bleeding and haematoma)

Uncommon Risks with Severe Consequences

- Contrast related anaphylaxis or acute renal injury
- Anti-coagulation-associated bleeding

The incidence of following complications varies with the severity of the disease. Generally, PCI is associated with higher rates of complications comparing with coronary angiogram alone.

- Death (≤1%)
- Stroke (≤0.4%)
- Coronary artery complications, such as perforation, embolization, and stent thrombosis (in PCI)
- Myocardial ischemia and infarction. Occasionally, urgent coronary artery bypass graft surgery is required.
- Vascular complications, such as access site and retroperitoneal bleeding, and atheroembolism
- Perforation of heart chamber
- Arrhythmias
- Re-narrowing of the dilated or stented coronary lesion might occur in 5-40% of the cases a few months after the procedure.

** The risks listed above are in general terms and the possibility of complications is not exhaustive. Please understand that even though all operations are carried out with utmost professionalism and care, this does not rule out the possibility of complications from arising. In the event of peripheral organ damage or post-operative haemorrhage or leakage, further operations may be required.

Pre-procedure Preparations

1. Some preliminary tests including electrocardiogram, echocardiogram, chest X-ray and blood tests are needed.
2. The procedure and possible complications are explained by the doctor and a consent form must be signed prior to the procedure.
3. Please inform the doctor and nurse all your past medical history, previous surgical operations, current medications and any complication with drug or anaesthesia.
4. For female clients, please provide the last date of menstrual period (LMP) and avoid pregnancy before the operation. This operation involves exposure to radiation.
5. Blood thinning drugs or metformin (for diabetes) may need to be stopped several days before the procedure as doctor’s advice.
6. Steroid cover may be needed if you have history of allergy.
7. Shaving may be required over the puncture site.
8. Good hygiene can prevent surgical wound infection. Please clean up yourself on the day of the procedure.
9. No food or drink four to six hours before the procedure. An intravenous infusion may be set up.
10. Please change into a surgical gown after removing all belongings including undergarments, dentures, jewelry and contact lenses.
11. Please empty your bladder before the procedure.

Post-procedure Instructions

1. Vital signs and the wound are monitored regularly by nursing staff.
2. Please inform the nurse immediately if pain or bleeding from the wound, numbness or decrease sensation of the affected limb, chest discomfort, difficult breathing or any other discomfort.
3. Bed rest is required for 24 hours. Please do not move or bend the affected limb.
4. In case of coughing or sneezing, please apply pressure on the wound with the unaffected hand to prevent bleeding.
5. Once food or fluid intake is allowed, please take more fluid to help eliminating contrast media by passing urine if not contraindicated.
6. Most patients can be discharged one or two days after the procedure.

If the procedure is performed through your wrist

7. A special wrist band is applied over the wound after the procedure to stop bleeding.
8. The wrist band is assessed and adjusted by nurses according to doctor's instruction. In general, it will be removed on the next day after the procedure.
9. Do not lift up any heavy object, avoid blood pressure and blood taking from the affected arm.

If the procedure is performed through your groin

10. A special pressure device or dressing is applied over the wound, along the groin and pelvic area after the procedure to stop bleeding.
11. The pressure device or dressing is assessed and adjusted by nurses according to doctor's instruction. In general, it will be removed on the next day after the procedure.
12. Complete bed rest for 24 hours is mandatory. Be reminded to keep the affected leg straight, and avoid sitting up or bending the knee. Please inform the nursing staff whenever assistance is required.

Advice on Discharge

1. Please take the medication as prescribed. Strict anti-platelet drug adherence is crucial. Premature termination or overuse of the drug can lead to fatal blood clot or bleeding.
2. A water-proof dressing is applied after the wrist band / pressure device has been removed. Always keep the wound site clean and dry.
3. Showers are allowed 1 day after the procedure. Be reminded to pat the wound and surrounding skin dry after showers. Avoid bathing until the wound is completely healed.
4. When the wound has not completely healed, a band-aid can be applied after daily cleansing of the wound with 70% alcohol or other antiseptic solution.
5. Bruising or mild swelling around the puncture site is common and usually subsides 2-3 weeks later.
6. Avoid any lifting or strenuous activity for 2 weeks, to prevent increasing pressure which may cause puncture site re-bleeding.
   If the procedure is performed through your wrist, avoid excessive exercise on the affected arm, e.g. playing tennis, twisting towel or carrying / lifting heavy objects.
   If the procedure is performed through your groin, avoid excessive exercise on the affected leg, e.g. climbing up and down stairs frequently, running or playing football. Apply pressure on the wound to prevent bleeding while climbing up and down stairs, sneezing, coughing or during bowel opening for 2 weeks.
7. It is rare to have severe bleeding from the puncture site. If bleeding does occur, you must lie flat with the affected limb elevated, apply pressure to the site for at least 10 minutes. For the unstopped/ severe bleeding, please call 999 for emergency help.
8. After PCI, our nurse will make you follow-up phone call. Please inform the nurse if you are uncomfortable or in doubt. Follow-up consultation may be rescheduled to an earlier date if needed.
9. Immediately consult your doctor or return to hospital for professional attention in the event of uncontrolled bleeding, pus discharge, increasing pain and swelling from the wound, chest discomfort, breathing difficulty, shivering, high fever over 38^{o}C or 100^{o}F, or any other unusual symptoms.
10. Any follow-up consultations should be attended as scheduled.

Should there be any enquiries or concerns, please consult the attending doctor.

Under the professional care of the doctor, you will gradually recover. We wish you all the best during your treatment and recovery.

If you have any questions after reading the entire leaflet, please write them down in the spaces provided in order for the doctor to further follow-up.

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Compiled by Union Hospital Operating Theatre (OT) Governance Committee

The above information is for reference only, please enquire your physician for details
Our Hospital reserves the RIGHT to amend any information in this leaflet without prior notification